Medicine Details Analysis

Problem Statement:

The pharmaceutical industry faces the challenge of managing vast amounts of data related to the composition, uses, and side effects of medicines. As the number of available medications continues to grow, healthcare providers need reliable insights to prescribe the most effective treatments while minimizing adverse effects. Additionally, understanding the distribution of medicine usage and patient satisfaction can help pharmaceutical companies improve their offerings.

Your task is to analyze a dataset containing detailed information about over 11,000 medicines, including their salt compositions, uses, side effects, manufacturers, and user reviews. The goal is to uncover patterns and insights that can help improve decision-making in the healthcare industry and enhance patient outcomes.

Dataset Access:

- The dataset **Medicine_Details.csv** can be downloaded from Kaggle.

Data Description:

- **Medicine_Name**: Name of the medicine.
- **Salt_Composition**: The active ingredients in the medicine.
- **Uses**: Medical conditions or symptoms the medicine is used to treat.
- **Side_Effects**: Known side effects associated with the medicine.
- **Manufacturer**: Company that manufactures the medicine.
- **Image_URL**: URL to the medicine's image.
- **Review_Excellent**: Percentage of users who rated the medicine as excellent.
- **Review_Average**: Percentage of users who rated the medicine as average.
- **Review_Poor**: Percentage of users who rated the medicine as poor.

Evaluation Parameters:

Evaluation will be based on:

- Feature Engineering (25%)
- Model Selection (20%)
- Visualization + Evaluation (20%)
- Presentation + Report (15%)
- LinkedIn Post (20%)

Expected Outcome:

- Gain insights into the factors that influence medicine effectiveness and patient satisfaction.
- Identify the most common side effects and their associated medicines.

- Predict user satisfaction ratings with high accuracy using the given features.

Submission:

- Python Script: Submit a well-documented Python/R script that performs the entire analysis, from data preprocessing to model evaluation and optimization.
- Presentation: Submit a presentation summarizing your findings, insights, and recommendations, with visualizations to support your analysis.